LXVII.—Descriptions of new Genera and Species of Hymenoptera. By P. Cameron.

[Continued from p. 419.]

The Males of Icaria.

Bingham, in his 'Hymenoptera of India,' does not describe the male sex of any species of *Icaria*. Saussure, in his 'Étude sur la Fam. d. Vespides,' only describes the male of one species, from which it would appear that the males must be carer than the females or workers.

The male of *I. ferruginea* is of the same size as the female, and agrees with it in general coloration. The underside of the scape, the eye-incision, the face, clypcus, and mandibles are pale yellow; the clypcus is strongly punctured, except at the apex; the clypcus is broader than long, is slightly convex, and is roundly and broadly incised in the middle, the sides being oblique; the fifth and following joints of the antennæ are roundly incised, the incision becoming deeper towards the apex; the apical joint is deeply incised, almost hook-shaped, somewhat as in *Eumenes*.

The male of variegata has the middle of the front, the eyeincision, the elypeus, and mandibles lemon-yellow; the elypeus is smooth, the incision on its top is somewhat horseshoeshaped, deep and black; the lateral keel does not reach to it: the flagellum becomes gradually thicker to the penultimate joint, the joints are not incised, the last is about three times longer than the preceding and is broadly curved on the lower side; on its inner side beneath it is broadly hollowed, the hollow bordered by a keel, which is obliquely curved. pro- and mesopleuræ are for the greater part yellow, streaked with rufous; the mesosternum is also yellow; the mesonotum blackish; the scutellum, postscutellum, and metanotum are also yellow; the yellow band on the apex is one fourth of the length of the segment and has a black band at its base; the other segments are for the greater part yellowish; the petiole is shorter than the second segment by about one fourth, and it is distinctly longer than it is in the \square. In length it is 12 millim.

I am not certain, but this may be the male of artifex, with which, in some points, it agrees better than it does with the female of variegata. The petiole appears to be intermediate between the two, being larger than in variegata, but not so long compared with the second segment as in artifex. The last joint of the antennæ is longer compared with the preceding than it is in ferruginea and is differently formed; the joints preceding it, too, are simple, not incised, as in ferruginea.

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Icaria quadrimaculata, sp. n.

Brunnea, flavo-maculata; petiolo segmentoque 2º flavo-bimaculatis; alis hyalinis, nervis stigmateque nigris. 3.

Long. 10 mm.

Hab. Bengal, probably Barrackpore (Rothney).

Antennæ blackish, the scape yellow below; the flagellum below and at the apex above brownish; the last joint is shortly but distinctly longer than the preceding. brownish: the eye-incision, the face, clypeus, and outer orbits narrowly yellow; the vertex and front are thickly covered with silvery pubescence; the frontal keel is stout and extends to the top of the clypeus, which is roundly incised in the middle; the sides are oblique. Mandibles yellow, like the elypeus, with the teeth black. Thorax brownish; a narrow line on the pronotum, the base of the propleuræ narrowly, a conical mark below the tegulæ in front, a smaller more oval one below it behind the furrow, a large irregular mark on the mesopleuræ on the lower side behind, a mark below the hind wings, the base of the scutellum (more broadly laterally), the postscutellum, and two marks on the metanotum, lemonyellow. Legs fuscous, the anterior lighter in tint; the tarsi black; the apex of the hinder tibiæ and of the hinder femora vellowish. Wings hyaline; the radial cellule infuscated. Abdomen brownish black: two spots on the node of the petiole near the middle, two in the centre of the second segment, and lines on the sides of the others, two large marks on the second segment beneath, broad lines, narrowed in the middle, on the base of the third to sixth, and the last broadly, lemon-yellow. The petiole is long and slender and not nodose at the apex, it becoming only gradually and slightly wider towards the apex from the middle.

This species is not, I am sure, the unknown male of I. fuscipennis; it appears to be too small; the markings on the thorax and abdomen are smaller and of a distinct lemon-yellow colour, not pallid; the head and abdomen are

darker, more distinctly black in colour.

Icaria ornaticeps, sp. 11.

Hab. Khasia Hills. Coll. Rothney.

Antennæ black; the scape yellow; the flagellum rufous beneath, densely covered with pale pubescence. Head black, the outer orbits entirely below, more narrowly above, the inner orbits from shortly above the top of the eye-incision (broadly below the incision, more narrowly above), a large irregular mark on the middle of the front extending from the ocelli to the base of the antennæ, the clypeus (except round the edges), and an irregular line in the centre above, a curved line on the sides behind the ocelli, and the mandibles, lemonyellow. The mandibular teeth are black at the apex. Thorax black; the prothorax at the base, on the sides broadly (especially on the upper half, where it extends to the middle of the pleuræ), two lines on the centre of the mesonotum at the base, the sides of the scutellum widely, the base of the postseutellum widely, the median segment (except in the middle), a large irregular mark on the base of the mesopleuræ under the wings, an irregular mark on the lower side at the apex, its base prolonged backwards below, and an elongated mark above the hinder coxa, lemon-yellow. The thorax is thickly covered with a pale pile and is impunctate; the short furrow on the metapleuræ black. Legs black; the fore coxæ, the four posterior (except broadly at the base helow), a line on the fore femora in the middle in front, the apex broadly below, the apical half of the middle, the apex of the posterior, with a streak in the centre, the fore tibiæ behind, and a mark on the middle pair, lemon-yellow. Wings hyaline, the costa, stigma, and nervures black; the radial cellule with a broad black cloud in front. Abdomen black; a pear-shaped mark on the side of the petiole, two large irregular marks on the base of the second segment, its base below broadly, its apex all round narrowly, the sides of the third broadly, lemon-yellow. The petiole is about two thirds the length of the second segment and becomes gradually wider towards the middle; the apical half is of uniform width; the second segment cup-shaped, widely rounded at the base; the second cubital cellule is much narrowed above: both the recurrent nervures are received behind the middle of the cellule.

Easily known by the yellow marks on the head and mesonotum.

Icaria rufocollaris, sp. n.

Nigra; capite, prothorace, scutello, dimidio apicali petioli apiceque segmenti secundi rufis; apice elypei, basi postscutelli medioque metanoti flavis; alis fuscis, nervis nigris, stigmate testaceo. Q. Long. 13 mm.

Hab. Khasia Hills. Coll. Rothney.

Antennæ black, the scape and the greater part of the second and third joints rufous; the flagellum of a duller rufous colour beneath. Head rufous; the vertex, occiput, the edges of the clypeus, and a large mark in its centre black; the apex of the clypens pallid yellow. Mandibles dull rufous, their base pallid yellow, the teeth black. Front and vertex distinctly and closely punctured; the clypeus with some scattered punctures, its apical tooth sharp, distinct; below each antenna is a short, deep, oblique furrow. Thorax black; the pronotum, a large oblique mark on the mesopleure, and the greater part of the scutellum rufons; the base of the postscutellum and the middle of the median segment pale lemon-yellow. Pro- and mesonotum with the scutellum closely punctured and thickly covered with pale pubescence; the postscutellum punctured at the base only; the median segment finely transversely striated. Pro- and mesopleuræ closely punctured, the punctures almost forming reticulations; the lower part of the metapleuræ obscurely punctured. Legs black, the four anterior coxe yellow below; the femora and tibiæ rufous, black above; the tarsi black. Wings fuscous, the front and apex smoky; the nervures and costa black; the stigma testaceous; the second cubital cellule is much narrowed at the top; the first recurrent nervure is received near the base of the apical third of the cellule. Abdomen black; the apical dilated half of the petiole, the sides of the second segment narrowly at the junction between the dorsal and ventral parts, and a narrow line before the apex, rufous; the apex itself is yellow.

The male has the face and clypens pallid yellow, this being also the case with the lower part of the cye-incision; the front and vertex are entirely black; there are two large yellow marks on the sternum between the four front legs; the neck of the second segment and a streak along the sides

at the base are yellow; otherwise as in \u2212.

Comes near *I. speciosa* and *ungulata*; easily known from them by the rufous prothorax. Instead of there being a detached spot on the base of the second segment there is a short yellow line laterally at the extreme base.

Icaria nigroplagiata, sp. n.

Ferruginea; metathorace nigro, medio flavo; abdominis segmento 2º basi biflavo-maculato, apice flavo; alis fere hyalinis, apice fumato, stigmate flavo, nervis nigris. Q. Long. 11 mm.

Hab. Khasia Hills. Coll. Rothney.

Antennæ dark rufous; the flagellum blackish above. Head thickly covered with short pale pubescence; the front and vertex closely covered with round, not very deep punctures; the ocellar region black. Clypcus yellow, its edges and a broad band down the middle black, the black edged with rufous, sparsely punctured and thickly covered with silvery pubescence, its top broadly roundly incised in the middle; the lower half of the outer orbits is black. Thorax rufous; the postscutellum and a large mark in the middle of the metanotum (incised at the top and bottom) lemon-yellow. Pro- and mesothorax with the scutellum closely and distinctly punctured; postseutellum smooth. Median segment obscurely striated; the yellow mark on it does not extend far below the middle. The punctuation on the metapleuræ is obscure. Legs dark rufous, the coxe, trochanters, femora, and hinder tibiæ darker coloured; the fore coxæ largely, the middle slightly, marked with pale yellow; they are thickly covered with white hair. Wings hyaline; the radial cellule and the upper part of the apical cubital cellules smoky; the top of the second cubital cellule is as long as the space bounded by the second recurrent and the second transverse cubital nervures. The narrowed basal half of the petiole is black; the node is longish; the petiole distinctly longer than the second segment; the second and following three segments are closely punctured and thickly covered with pale hair; the two yellow marks on the base of the second are irregular in shape; the apical band is narrow.

This species is closely related to *I. artifex*; it may be known from it by the metathorax being entirely black, except for the yellow mark on the middle of the metanotum, by the scutellum not being furrowed down the middle, by the yellow mark on the metanotum being smaller, it not extending much beyond the middle, the pleuræ entirely without yellow, and the head is more broadly developed behind the eyes, especially

above.

Icaria carinata, sp. n.

Ferruginea; abdomine nigro, flavo-maculato, basi ferruginea; alis fusco-hyalinis, stigmate nervisque nigris. d. l.ong. 15 mm.

Hab. Khasia Hills. Coll. Rothney.

Comes into Bingham's Section A a (l. c. p. 286), in which it will form a new division, distinguished by having the second and following segments of the abdomen black. Antennæ ferruginous, the flagellum darker above. Head ferruginous

darker above; the face thickly covered with silvery pubescence; the antennal tubercles longish, extending equally below and above the antennæ, and sharply keeled down the middle: the front and vertex closely punctured, closely transversely above the antennæ; the sides narrowly and the apex of the clypeus broadly pale yellow; the apex of the clypeus broadly rounded, not projecting in the middle. Mandibles pale yellow, thickly covered with silvery pubescence; the teeth black; the palpi pale yellow. Thorax dark ferruginous; a narrow line on the base of the postscutellum and two large marks (longer than broad and oblique at the base and apex) on the apex of the median segment lemon-yellow. scutellum is darker coloured than the mesonotum and is widely furrowed down the centre on the apical half; the postscutellum is finely longitudinally striated in the centre. The median segment is narrowly furrowed at the base, the rest with the furrow much wider; the segment is thickly covered with short fuscous hair and is obscurely transversely striated; the furrow is blackish on the apical two thirds. The propleuræ below, the mesopleuræ above, and the base and apex of the metapleuræ more or less blackish. Legs dark rufous; the four hinder femora infuscated above; the tibiæ black, except in front, the tarsi for the greater part black. Wings hyaline, with a fuscous tinge; the radial cellule and the apex of the costal cellule snicky. Petiole dark rufous, blackish at the base and apex; the rest black; there is a broad yellow band on either side of the second segment at the base; two smaller ones on the base of the third; a mark on the sides of the fifth near the middle; the last segment is broadly obscure yellow on the base. The apex of the petiole is yellowish and sharply bordered laterally; the basal three fourths of the second and third segments, the basal half of the fourth, the base of the fifth narrowly, and a longer semicircular mark on the base of the sixth, yellow.

A very distinct species, intermediate between Bingham's sections "A. Reddish or ferruginous brown, with yellow markings," and "B. Black, with red or yellow markings."

Icaria Wroughtoni, sp. n.

Long. 15 mm.

Hab. Poona (Wroughton).

Comes into Bingham's section "A. Reddish or ferruginous brown, with yellow markings," and "a. Second abdominal segment with no transverse yellow band on its apical margin," which now stands:—

Antennæ rufous, darker towards the apex. Head rufous; the antennal tubercles and the apex and sides of the clypeus broadly lemon-yellow; the antennal tubercle punctured, narrowly keeled in the middle; the clypens with scattered shallow punctures, its sides oblique, ending in the middle in a black blunt tooth; the apex of the clypeus with scattered punctures; the face bears a white pile; the clypens is sparsely covered with long fuscous hair, black along the apex. Mandibles yellow; the teeth black. Thorax rufons; the pleuræ more or less and the sides of the median segment yellow. Scutellum broadly furrowed down the middle. Median segment broadly furrowed down the middle, the top, sides, and furrow blackish, the centre yellowish, the furrow finely transversely striated. Propleuræ broadly lemon-yellow round the edges, except behind; the lower part sharply keeled at the base, the lower part behind the coxæ raised, hollowed above the raised part; there is a bifurcated furrow on the mesopleuræ, from the centre of which a furrow runs obliquely to the fore coxe. On the metapleuræ below the wings is a curved furrow; behind this is an obliquely striated space; the base of the pleuræ more coarsely striated, the striated part becoming wider on the lower part. Metapleuræ finely obliquely striated. Legs rufo-testaceous, the coxæ yellowish. Wings hyaline; the radial cellule and the upper part of the costal smoky; the costa and stigma rufo-testaceous; the nervures slightly paler, especially towards the apex. Petiole rufous above, the sides yellowish; the other segments ferruginous, the second to the fifth with two large transverse yellow marks; the second ventral segment is for the greater part yellow; the others broadly yellow at the base.

Icaria fuscipennis, sp. n.

Long. 13-14 mm. 9.

Hab. Khasia Hills. Coll. Rothney.

Comes into Bingham's section A and is closely related to I. carinata, with which it agrees in having the abdomen black and the wings fuscous-hyaline, but may be known by the shorter petiole, by the pleuræ and sternum being marked with yellow, by the mesonotum having two yellow lines, by the four hinder legs being largely marked with black and

yellow, and by the second abdominal segment being marked with yellow at the base. In the presence of the two yellow marks on the base of the second abdominal segment it agrees with artifex and variegata, from which it is otherwise very distinct.

Antennæ dark rufous, darker above; the scape yellow below. Head dark rufous; the clypeus, the inner orbits to the top of the eye-incision, the upper half of the antennal tubercle, the outer orbits (narrow above, broader below) from near the top to the base of the mandibles, the palpi, the mandibles (except at the apex), a transverse line on the pronotum above, one on its sides, the postscutellum, two large marks on the metanotum, an oblique squarish mark under the tegulæ, a larger oblique one (narrowed at the base) on the lower side on the apex of the mesopleura, a mark on the top of the metapleuræ, triangularly dilated below, on the sides of the mesosternum is a large mark turned outwardly at the base and largely dilated at the apex, on the apex is a larger oblique mark, at the tubercles a smaller one, and on the lower half of the metapleuræ is a large mark, incised in the middle above, and the base of the propleurae, all clear yellow. Scutellum narrowly furrowed in the middle from the base to the apex; the median segment widely but not deeply furrowed down the middle. Wings fuscous-hyaline; the apex of the costal cellule and the radial cellule smoky, especially above. The four front legs yellowish, the trochanters, the femora in front (except at the apex), the basal half of the tibiæ, and the basal joint of the tarsi fuscous; the middle coxæ broadly on the inner side below, the basal half of the femora, the basal two thirds of the tibiæ and the tarsi black; the hinder legs similarly coloured, but with the black more extended. Petiole dark rufous; the sides (except at the apex) and a mark on the sides of the dilated part, two large marks on the sides of the second segment at the base, two large marks on the base of the third, two smaller ones on the base of the third and two large marks on the last segment, the sides of the petiole beneath, a large mark (narrowed at the base) on the base of the second, a large transverse line (dilated at the sides) on the base of the third, and a narrower one on the base of the fourth segment, lemon-yellow. The sides of the clypeus are oblique, its middle ending in a short blunt tooth; the antennal tubercle is large; the edge of the pronotum is sharply keeled above; the thorax above thickly covered with short white pubescence.

Icaria tinctipennis, sp. n.

Ferruginea; abdomine, coxis femoribusque posticis nigris; alis fusco-hyalinis, nervis stigmateque nigris.
Ω.

Long. 21 mm.

Hab. Khasia Hills. Coll. Rothney.

Antennæ rufous; the basal joints of the flagellum darker above. Front and vertex shagreened, thickly covered with fulvous pubescence; the part between the antennæ projecting, keeled in the middle. Clypeus shining, sparsely punctured, thickly covered with fuscous hair; the apex in the middle forming a distinct tooth. Mandibles pilose, sparsely and distinctly punctured; the teeth deep black. Thorax rufous; the edges of the mesonotum, a line down the centre, the apex of the mesopleure, the part along the sutures, the breast, the base of the metapleuræ, the central furrow of the metanotum The entire thorax is thickly covered and its sides black. with short pubescence, which has a fulvous tint on the mesonotum; the pleuræ are shagreened; the metanotum obscurely transversely striated. The nervures are paler, more testaceous in tint than the costa and stigma; the second cubital cellule above is distinctly wider than the space bounded by the two recurrent nervures; the space bounded by the second and by the third transverse cubital nervures is slightly but distinctly wider than the space enclosed by them. Legs coloured like the thorax; the coxæ, the hinder trochanters. and the hinder femora blackish; the four hinder tarsi are infuscated. Petiole longer than the second segment, the node becoming slightly and gradually narrowed towards the apex; the third segment is one third longer than the fourth, which is equal in length to the fifth.

The differences between this species and I. fulvinerva may

be best shown in synoptical form :-

The petiole is stouter and more distinctly dilated towards the apex, the scutellum is not furrowed down the middle, and the propleure not striated as in *fulvipennis*. It is one of the largest of the Indian species.

Icaria fulvinerva, sp. n.

Ferruginea; abdomine nigro, petiolo ferrugineo; tarsis posterioribus nigris; alis flavo-hyalinis, nervis stigmateque rufis. Q. Long. 17-18 mm.

Hab. Khasia Hills. Coll. Rothney.

Antennæ ferruginous; darker above, the scape brownish. Front and vertex alutaceous; the incision and the inner orbits black; the front with a narrow furrow in the middle; the part between the antennæ projecting, its sides oblique, the centre keeled. Clypeus shining, of a brighter colour than the front, sparsely punctured, its apex thickly fringed with fulvous hair. Mandibles dark ferruginous, sparsely punctured, the teeth black. Thorax thickly covered with a silky pile. Mesonotum and scutellum shagreened, the latter with a shallow furrow down the middle. The striæ on the metanotum not prominent and absent from the furrow, which is shallow and black on the apical half. The lower half of the propleuræ striated; the furrow on the mesopleuræ black, deep, its basal fork not continued to the base and not much longer than the apical. Legs coloured like the body; the four hinder tarsi black above and for the greater part below; the calcaria pale. Wings hyaline, with a distinct yellowish tint, especially in front; the second cubital cellule is fully more than half the length of the third above and slightly less than the space bounded by the first transverse cubital and the first recurrent nervures; the latter is received shortly in front of the middle. Petiole rufous, longish, its node not much dilated; it is nearly as long as the second and third segments united; all the segment very smooth and covered with a silky pile.

A distinct species, easily known by the red head, thorax,

and petiole, black abdomen, and fulvous wings.

Odynerus hindostanus, sp. n.

Long. 9 mm. Q.

Hab. Barrackpore (Rothney).

Agrees closely with O. sibilans; differs from it in the yellow mark on the front being separated from the yellow lateral marks, in the clypeus being broader compared to its length, it being broader than long, its sides are not so straight and its apex in the middle is more distinctly incised, and the second ventral segment bears two large yellow marks.

Antennæ black, the scape yellow, the flagellum rufous beneath. Head black; the clypeus, a somewhat crown-

shaped mark on the front, the eye-incision, and the posterior orbits yellow. Vertex closely, the front somewhat more widely punctured. Clypous wider than long, its sides roundly curved; the apex with a shallow incision. Mundibles yellow, the apex broadly rufous. Thorax black; a broad mark on the sides of the pronotum (the two almost touching), the tegulæ, a large mark under the tegulæ, the scutellums, and the sides of the median segment broadly, vellow. Pro- and mesothorax closely and strongly punctured, the upper basal slope of the pronotum, the base and apex of the mesopleura, the base of the metapleura, and the middle of the metanotum smooth; the punctuation on the median segment is slight, its centre is broadly and slightly hollowed and is keeled down the middle. Legs yellow; the anterior coxæ entirely, the four posterior behind, the anterior femora at the base behind and the posterior entirely (except at the apex), black; the four posterior tibiæ are marked with black behind. Wings fuscous-hyaline, the apex violaceous; the second cubital cellule much narrowed above, scarcely one fifth the length of the third. Abdomen black; the apical half of the petiole broadly at the nodes and the apex entirely, a large irregular mark (wider than long) on the sides of the second segment, its apex broadly, widest in the middle, the apex of the third to fifth, and the sixth broadly in the middle, yellow. On the second segment beneath are two yellow marks; its apex and that of the third broadly yellow.

The male is similarly coloured; there is less black on the legs; the yellow mark on the front is prolonged between the antennæ as a short streak; the flagellum is black, except at the apex; the yellow on the scutellum is narrowed and

incised in the middle.

Odynerus Antoni, sp. n.

Niger, dense albo-pilosus; basi clypei, linea pronoti lineaque abdominis segmentis 1° et 2° rufis; alis fusco-violaceis. S. Long. 7 mm.

Hab. Barrackpore (Rothney).

Antennæ entirely black, except the apical claw, which is brownish; it is thick and reaches to the base of the eleventh joint. On the head, the base of the clypeus broadly, a mark between the antennæ, and a small mark behind the eyes are brick-red; the front and vertex are closely and strongly punctured and covered with long white hair; the keel between the antennæ is stout. Clypeus roundly convex, sparsely punctured, thickly covered with white, somewhat depressed pubescence; its apex depressed and slightly roundly incised

in the middle. Pro- and mesothorax strongly rugosely punctured, covered thickly with white hair; the pronotum is transverse at the base, its sides triangularly projecting; on the posterior half of the mesonotum are two shallow furrows. Apex of postscutellum rounded. The apex of the median segment has an oblique slope and is transversely aciculated; it is bounded above and at the sides with a stout keel, which is bent down towards the centre above; from this a narrow keel runs down the middle. Pro- and mesopleuræ strongly punctured; the punctures large and distinct; there is a somewhat triangular red mark at the tubercles. Metapleura finely and closely longitudinally aciculate; the upper half irregularly longitudinally striated. Legs black; the anterior tibiæ entirely in front and the middle pair at the base testaceous. Wings fuscous-violaceous, the posterior pair paler; the second cubital cellule above not quite one half the length of the third. Abdomen black; the first and second segments lined with black on the apex; the petiole has an oblique slope on the base and is sharply keeled above; it is somewhat strongly but not closely punctured; the other segments are obsoletely punctured; the base of the second is crenulated.

Allied to *O. sikhimensis*.

Note.—At p. 415 anteà, for Polistes khasianus read P. lepcha.

[To be continued.]

BIBLIOGRAPHICAL NOTICES.

Catalogue of Eastern and Australian Lepidoptera Heterocera in the Collection of the Oxford University Museum.—Part II. Noctuina, Geometrina, and Pyralidina. By Colonel C. Swinder, M.A., F.L.S., F.Z.S., F.E.S. Pterophoridæ and Tineina by the Right Hon. Lord Walsingham, M.A., LL.D., F.R.S., &c., High Steward of the University of Cambridge, and John Hartley Durrant, F.E.S., Memb. Soc. Ent. France. With eight Plates. (Oxford, Clarendon Press, 1900.) Pp. vii, 630.

The importance of public collections of insects depends partly on the number of species accurately named, and partly on the possession of types, by which the descriptions of the original describers of a species can be checked or verified. The original specimens on which species are founded should always find their way eventually into public collections; for private collections are not always easy of access, and their contents are almost sure, sooner or later, to be lost or dispersed. Great Britain is peculiarly rich in public collections, and may boast of a considerable number of the types of Linné, preserved by the Linnean Society; though Queen Ulrica's collection, from which Linné likewise described many species,